Volume 49 Number 1 January–February 2008

Articles

Photons in the service of our past: lasers in the preservation of cultural heritage
Savas Georgiou, Demetrios Anglos and Costas Fotakis 1

Antihydrogen for precision tests in physics
M. Charlton, S. Jonsell, L.V. Jørgensen, N. Madsen and D.P. van der Werf 29

Mechanical erosion by flowing lava
Jens Siewert and Carmelo Ferlito 43

Book reviews 55

Volume 49 Number 2 March–April 2008

Articles

Bayes in the sky: Bayesian inference and model selection in cosmology
Roberto Trotta 71

Sound transmission through water–air interfaces: new insights into an old problem
Oleg A. Godin 105

Quantum optical metrology – the lowdown on high-N00N states
Jonathan P. Dowling 125

Book reviews 145

Volume 49 Number 3 May–June 2008

Articles

Granular gas dynamics: how Maxwell's demon rules in a non-equilibrium system
Ko van der Weele 157

Atoms in high intensity mid-infrared pulses
P. Agostini and L.F. DiMauro 179

Many-electron strong-field physics
W. Becker and H. Rottke 199

Book reviews 225

Volume 49 Number 4 July–August 2008

Articles

Eruptive events in the solar atmosphere: new insights from theory and 3-D numerical modelling
Ilia I. Roussev 237

Luminescence detection of phase transitions, local environment and nanoparticle inclusions
P.D. Townsend, B. Yang and Y. Wang 255

The search for axions
G. Carosi, K. van Bibber and M. Pivovaroff 281

Book reviews 299

Volume 49 Number 5 September–October 2008

Articles
Light scattering
Paul R. Berman 313

Laser surface authentication – reading Nature's own security code
Russell Cowburn 331

Rumsfeld hadrons
F.E. Close 343

Nanometrology
D.J. Whitehouse 351

Essay review
An overview of almost 20 years' research on cold fusion
E. Sheldon 375

Book reviews 379

Volume 49 Number 6 November–December 2008

Articles
Femtosecond lasers in biology: nanoscale surgery with ultrafast optics
Christopher V. Gabel 391

Quantum nanoscience
G.J. Milburn and M.J. Woolley 413

Quantum feedback control: how to use verification theorems and viscosity solutions to find optimal protocols
Kurt Jacobs and Alireza Shabani 435

Essay review
A starring role for nuclear physics
Eric Sheldon 449

Book reviews 455

Volume contents 468